EN

HYUNDAI

DIESEL POWER GENERATORS

DHY12000SE(-3)
DHY15000SE(-3)

USER MANUAL

REVIEW MANUAL CAREFULLY TO AVOID PERSONAL INJURY

MADE UNDER LICENSE OF HYUNDAI CORP. SEOUL, KOREA

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1. SAFETY INFORMATION

In order to ensure a safety use of the generator please follow the next safety instructions:

1. Check the outside of the generator in order to detect any apparent trouble.
2. The use or good quality oil and diesel is a must.
3. Storage should be in a dry place. Frost damage permanently your group. Drain your machine completely before storing in a dry hot place.
4. Check and clean filters regularly.
5. Make sure all subset of the machine are right.
6. Exhaust fumes contain carbon monoxide, a very dangerous gas, colorless and odorless, never use the generator in premises or areas closed. Make sure the group is installed in a location with adequate ventilation or equipped with a smoke extractor.
7. The exhaust temperature rises during the use of the group and still burning even after shutdown. Take care never to touch or move it to store before being on it is cool enough.
8. Repair your generator shall be made by a qualified person and trained for this purpose.
9. Do not smoke, do not flame or spark when operating or filling the tank, store the generator near flammable materials.
10. Store the group in a well ventilated area.
11. Never transport or store your generator in a horizontal or leaning of fuel leak and / or oil or will permanently damage your machine.
12. Never stop the generator when is load applied, be sure to disconnect any apparatus from the generating set prior start of prior stop.
13. Do not allow children to operate the engine. Keep children and pets away from the area of operation.
14. The engine and exhaust become very hot during operation. Keep the generating set at least 1.5 meter away from buildings and other equipment during operation. Keep flammable materials away, and do not place anything on the engine while it is running.
15. Use only diesel fuel.
16. To avoid electric shocks or short circuit, do not touch the generating set when your hands are wet. This generating set is not water proof, so it should not be used in a place exposed to rain, snow or water spray. Use of the generating set in a wet place can cause short circuits and electric shock during operation.
17. The generating set must be grounded to prevent electrical shocks from from faulty appliances. Please connea lenght of heavy wires between the generating set ground terminal and a external ground source
18. Most applicance motors requiere more than their rated waltage for star-up, so follow recommendations of your dealer to choose the right power for your applicance.
19. Do not exceed the expecific current limit of any socket.
20. Do not connect directly the generating set to a household circuit.
18. No guarantee will be covered in case of non-compliance of start-up procedures and safety precautions.

1. SAFETY INFORMATION

Any use of the generator without reading this manual could cause hard damage to the machine o can hurt yourself seriously

Pay special attenction to the next:

- Do not use the generator in a non ventilated area
- Do not use the generators in wet conditions
- Do not start the generator when device plug.
- Keep at least 1 meters from flammable objects
- Do not refill the fuel tank with the generator running
- Do not smoke when fuel refill
- Do not overfill the fuel

SAFETY GUARDS:

1. Do not use kerosene or other fuel, only use diesel fuel. Clean all the excess of fuel when refill.

2. Any flammable or explosive product shall be kept away from the generator, due to the high temperature of the engine.

3. Install your group on a flat, horizontal surface, to avoid spillage of gasoline.

4. Inhalation of exhaust gas:

The exhaust gases contain poisonous carbon monoxide. Never use the group in a poorly ventilated area

5. Never touch the exhaust when the generator is running or after starting.

6. Short circuits:

Do not touch your group with wet hands. The generator is not waterproof, so it should not be exposed to water or snow.

7. Other safety points:

Yon must know how to absolutely stop your group before using it. Never allow someone to use the generator without having read the manual! Always wear a safety shoes and keep you always ready to clean rags. Keep children and pets away

2. COMPONENTS

1 Frame
2 Fuel level meter
3 Fuel cap
4 Air filter cover
5 Control panle
6 Fuel filter
7 Fuel valve
8 Speed gobernor
9 Oil Dipstick
10 Battery
11 Muffler
12 Wheels

1 Frame
2 Fuel level meter
3 Fuel cap
4 Air filter cover
5 Control panle
6 Fuel filter
7 Fuel valve
8 Speed gobernor
9 Oil Dipstick
10 Battery
11 Muffler
12 Wheels
13 Oil filter

1 Plate
2 Main breaker
3 Controller fuse 2A
4 Contactor Key
5 Controller
6 16A circuit breaker
7 16A single phase socket
8 ATS connector
9 socket
10 12V connector
11 12V fuse
12 Earth connection

3. CHECK BEFORE USE

3.1 Notes for diesel generator set operation

Before operating diesel generator, please read the manual. Especially following points should be paid attention to for preventing the accident happened.

3.1.1. Preventing the fire

The engine fuel is light diesel. It is forbidden to adopt gasoline and kerosene etc. When the oil overflows, please use clean cloth to remove the oil. It is not permitted to have diesel generator near to gasoline, kerosene, match and inflammable material, because the temperature around the muffler is very high when the engine is operated. For the sake of better ventilation during the generator operation, the distance between diesel generator and the building should be more than 1.5 meters. The diesel generator should be operated on plain ground. Otherwise, the oil will overflow from diesel generator.

3.1.2 Preventing the suction of exhaust gas

For avoiding exhaust gas sucked by the person, the diesel generator will be not allowed to work under condition of worse ventilation, because exhaust gas emitted from the engine includes harmful CO.

3.1.3 Preventing the damage by high-temperature parts

When diesel engine is working, it is not allowed to touch high-temperature parts, such as muffler and its shell etc.

3.1.4 Preventing the electric shock or short circuit

For avoiding the shock by electricity or short circuit, it is forbidden to touch with hand the alternator when working. Do not operate the generator in raining or foggy.

For preventing the shock by electricity, the grounding should be made with adoption of the wire, which of one end is connected with the grounding terminal of the generator and another end is connected with the device outside. The grounding terminal of the generator is on control panel.

3.1.5 Other safety points

It is very important to know how to stop the generator and the functions of all switches. The untrained person is not permitted to operate the generator. The operator should wear safe clothes and shoes during working.

fuel filter

3.2 Preparation before starting

3.2.1 Selection of the fuel

Only use light diesel. Fill in the diesel to fuel tank at full level. If the water exists in the diesel, should drain off the water from oil/water separator. Otherwise, the water will enter into fuel pump, resulting in the engine to be damage.

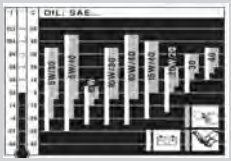
FUEL TANK CAPACITY: 21l.

Note: Clean overflow diesel.

It is not permitted to smoke or stay close to fire when filling in or at fuel storage. During adding the fuel, overflowing should be prevented. After completion of filling oil, should firmly retighten the tap of fuel tank.

When the diesel includes water, the diesel generator is fit with fuel/water separator to remove the water. Only screw down the tap of the separator with left direction to drain off the wate fromt he fuel filter, them retight the screw. Remember to clese the fuel valve before drain the water from the fuel filter.

3.2.2 Filing the lube oil



The qualified lube oil should meet following condition.

ACEA-B2/E2 or higher-grade specification

API-CD/CE/CF-4/CG-4 or higher-grade specification

If adopting inferior lube oil, should change the lube oil after every 150 hour operation.

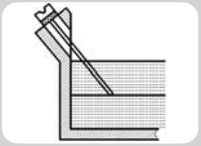
It is very important to select the applicable engine oil for keep up the performance and life of the generating set. If inferior engine oil is used, or if your engine oil is not replaced periodically, the risk of piston seizure, piston ring sticking and accelerated wear of the cylinder liner, bearing and other moving components increases significantly. So the generating set life will be shortened.

We recommend CC/CD oil classified by API. Choose the applicable viscosity oil according to the local ambient temperature.

Replacement of the oil:

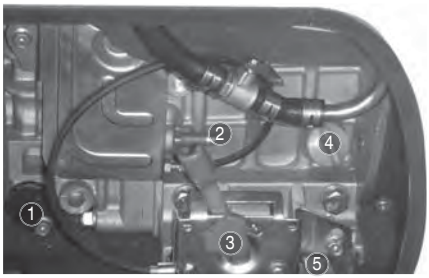
- First replace after 20 hours
- Second to forth replace every 100hours
- Them every 200 hours

3. CHECK BEFORE USE

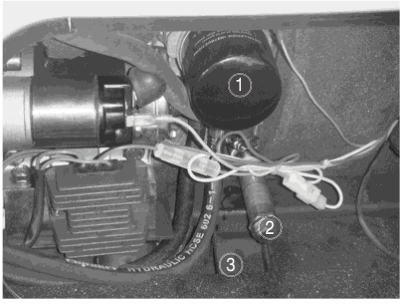


Put the generator on plain ground, then fill in lube oil through the opening of oil dipstick. When checking oil level, only place the dipstick into the hole.

When starting the generator each time, should check oil level. If not being enough, should add the lube oil to the stipulated level. Draining off lube oil can be immediately done after engine stopped, because it is difficult to drain off the oil thoroughly when the engine is in cold state



1 Prime lube oil filter
2 Speed gobernor bolt
3 Speed gobernor
4 Oil dipstick
5 Manual speed stop



1 oil filter
2 Oil drain bolt
3 Drain groove

3.2.3 Check air cleaner

① It is forbidden to clean the element with detergent.

② When output power drops or exhaust gas is black, should change the element.

③ It is not permitted to start the generator without air cleaner. Otherwise, it will cause the generator to be damage easily.

Air filter removal:

Unscrew the bolt and take out side plate

Loosen the clipper to take out the cover of air cleaner for getting the element.

After installing the element, fit the cover of air cleaner and retighten the clipper firmly.

3.2.4 Checking the alternator

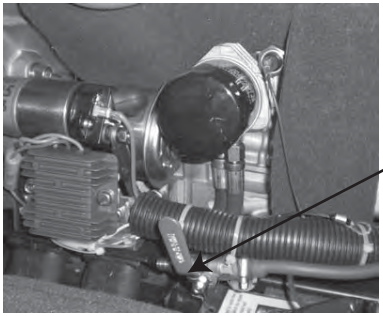
Turn off main switch for unloading, like lamp and motor etc.

Before starting the generator, must turn off main switch. If not in this position, it is very dangerous for the generator to be started with the load so can damage the AVR and the alternator.

The alternator should be grounded correctly to prevent the shock by electricity.

ATTENTION!!!

The fuel and lube oil have been removed prior to delivery. When filling in the fuel, should check whether there is the air in the piping before starting. If existing, should drain off the air by unscrewing on fuel pump till no air bubbling comes out from the diesel, then retighten the screw again, new models are equiped with a air purge valve to take out the air of the fuel injector. Do not open the valve when the generator works normally. Just open to purge the air.



3.2.5 Battery

The battery The baterIf the accumulator is of liquid-added type, sis maintenance free.

During the operation, the generator can automatically charge the battery. If the generator is used for stand-by application, the charge of the battery could drop down. We recommend to make at least 2 start up of the generator per week with at least 30min. running in order to keep the battery recharge. If longer time not starting the generator the battery can go out of charge so a external charger should be used in order to complete the charge.

Please check regularly the charge of the battery, should be over 12V in order to keep the battery in good conditions.

3.2.6 Operation in trial

For new engine, it is necessary to have 20 hour running-in operation initially.

A. Avoiding over-load

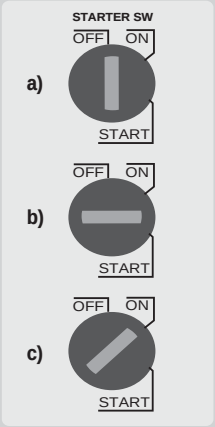
During the trial operation, should prevent over-load.

B. Changing lube oil at fixed period

Change it after initial 20 hours operation

4. START THE GENERATOR

4.1 Preparation before starting



1 Turn fuel switch to “ON” position.

2 Put speed handler of the engine at “RUN” position.

3 Place circuit breakers in OFF position so no power is given by the generator.

4.2 Starting

1 Insert the key to “OFF”position.

2 Be sure the speed gobernoris set to “RUN” position

3 Turn the key to “START” position clockwise. no longer than 5 seconds.

4 After starting successfully, remove the hand from the key to make the key be “ON”position automatically.

5 If failed to start please wait 15 seconds for next starting.

If starting motor works too long, the voltage of the accumulator will drop to cause the motor to be blocked. During the operation, let the key be in “ON” position.

6 If the control panel is intelligent type, also please refer to its manual

7 For remote control start be sure there is no load before starting the generator.

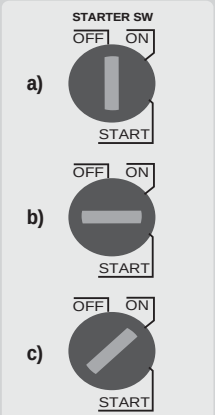
4.3 Difficulties on start up

When it is difficult to start the engine in cold temperature, the engine need to be equipped with glow plug. (Please require specially when buy engine).

It is very important to retighten oil dipstick firmly before starting. Otherwise the engine parts will be worn out by rain, dust and other impurities.

NOTE: Do not adjust fuel quantity controller or speed limiter-gobernor (has been adjusted before delivery). Otherwise, the performance of the engine will be affected.

4.4 Operation of the generator



1 Start the engine

2 Preheat the engine for three minutes without load.

Do not adjust fuel quantity controller or speed limiter-gobernor (has been adjusted before delivery). Otherwise, the performance of the engine will be affected.

3 Read values of voltage and frequency in the display, and wait to add load until this values are stable and according to the specifications of the product.

4 Check whether there is abnormal sound or strong vibration.

5 Check whether the engine works out of order.

6 Check the color of exhaust gas: black or too white, If any of them mentioned before occurs you should stop the generator and then contact with local dealer

7 When voltage indicating on control panel reaches ±10% of rated limit, can add the load.

8 Place the circuit breaker up to the ON position and them the generator is ready to receive load.

9 Do not start more than two machines in the same time. Only start them one by one. Do not use floodlights with other machines meanwhile. Please refer to table bellow.

LOAD / MODEL	Home electric appliance, incandescent lamp.	Machine with rectifier type motor	Machine with capacitance starting type
	Projector, electric cooker, T.V., bulb, microwave.	Drilling machine, grinding machine	Water pump, air compressor.
DHY12000SE/3	8000 W	4000 W	1000 W
DHY15000SE/3	1000 W	5000 W	1500 W

4.5 DC applications

DC terminal output is 12V 8.3A. Red terminal refer to the positive poles of battery. The rated voltage is 12V and charge 12V battery.

1 When connecting automatic-type accumulator, must disconnect the wire from the cathode of the accumulator when charging.

2. Starting diesel generator.

3 Connect charging wire between accumulator terminal and generator anode DC connection. Pay attention to the anode and cathode. Otherwise, it will make the generator and accumulator be damaged.

Do not let two terminals contact with each other, which will make the circuit short.

When charging big capacity accumulator, the charging current should be less than 8A. Otherwise, the fuse will burn.

4. During charging the accumulator will make inflammable gas. So place away spark, flame and cigarette. To avoid spark near the accumulator, connect first the charging wires with the accumulator before charging and disconnect from the generator after breaking down.

5 Charge the accumulator under the place with better ventilation. Before charging, open the accumulator cover. If electrolytic temperature is over 45 degrees Celsius, should not recharge.

4.6 . Instruction for control panel function

1 Three numeral code "VOLT.", indicates the alternating voltage value (virtual value), unit: V;

2 Three numeral code "POWER.", shows the power value, unit: KW;

3 Three numeral code, multifunctional, related with 4

4 Ten bar codes show as following:

4. START THE GENERATOR

1. Frequency (Hz)

2. Current (A)

3. Battery voltage（V）

4. Run time (H)

5. Engine temp. (degrees Celsius)

6. Disuse

7. Software release

8. Auto protection

9 Diesel valve on indicator

10. Starter indicator

❺ Six LED lamps show as following:

1. Green lamp: disuse;

2. Green lamp: indicate fan starting (the fan will start when inner temperature is higher than set value);

3. Red lamp: Warning and indicate protecting for over temperature (when the inner temperature is higher than 98 , the red lamp will turn on; the generator will stop if the temperature is continuously excess for 5 seconds, meanwhile, the red lamp twinkles);

4. Red lamp: lower diesel level warning (when the diesel fuel level is low, the red lamp will turn on; the generator will stop if the level is continuously low for 20 minutes; meanwhile, the red lamp twinkles);

5. Green lamp: charging indicator （to detect the charging and AC output of the winding, if the charging and AC output are normal, the lamp twinkles）;

6. Red lamp: engine oil pressure warning (the generator will stop automatically when the engine oil pressure is low; meanwhile, the red lamp twinkles).

❻ Press button to navegater thru the functions

❼ Indication for engine oil pressure: the lamp will be on when turn key on “ON” position for 10S and before the engine start, show signal wire for the engine oil pressure is reliable. If the lamp is not on when turn the key, indicate that the failure connection for signal wire for engine oil pressure.

4. START THE GENERATOR

Turn key from “OFF” to “ON” when engine is stopped, at this moment, the voltage, the current, the frequency and the power values are all showing the set parameters, and then will show “—” after 2 seconds ;

“LOW OIL” indicator lamp shows according to detection result, the lamp is on when the switch of engine oil level is closed (the switch should be closed when the generator is not working). If the lamp is not on before running, indicates there is something wrong with the switch of engine oil level or wiring.

Ten bar codes;

1# lamp is on shows the frequency value (the one on the top of the ten bar codes), press button “▽” in order, the following value will shown on ③ if continue pressing the key will show as:

2. Current (A)
3. Battery voltage（V）
4. Run time (H)
5. Temp. (degrees Celsius)
6. Disuse
7. Software release

If lamp 8# is on, auto protection is effective; otherwise, auto protection is ineffective.

If lamp 9# is on, diesel valve is power up;

If lamp 10# is off, the start motor is not power up.

Start of the Generator

Under this mode, the generator will stop when engine oil level is low, or diesel level continuously low for 20 minutes, or the temperature continuously excess for 5 seconds, meanwhile, the system is controlled automatically.

Turn the key to “START” position from “ON” position, the generator starts; meanwhile, the diesel oil valve indicator and the starter indicator are both on, while engine oil level indicator is off.

Loose the key after start, at this time, the diesel oil valve indicator is on, the starter indicator is off, the present value of voltage, frequency and power are all shown;

Press “▽” or “△”ordinally, the other parameters are shown, when pressing “ ”, it will go back to show frequency value.

4.7 Autoprotection

The protection that related with voltage, frequency and overloading (except engine oil, temperature and diesel oil level) are effective under auto mode.

If lamp 8# in the ten bar codes is on, the auto protection is effective, otherwise, it is ineffective.

1. Voltage protection

If the value is higher or lower than the limits 10%, the voltage digital code will twinkle, if it continuously low for 7 seconds or continuously high for 3 seconds, the auto protection will begin to take effect, meanwhile, the voltage digital code will continue twinkling, and will show the value before protection.

If the auto protection setting is ineffective, the voltage digital code will twinkle and the generator will not stop.

2. Frequency protection

50Hz：47~55

60Hz：57~65

If the value exceed the limits, the frequency digital code will twinkle, if it continuously low for 7 seconds or continuously high for 3 seconds, the auto protection will begin to take effect, meanwhile, the frequency digital code will continue twinkling and will show the value before protection.

If the auto protection setting is ineffective, the frequency digital code will twinkle and the generator will not stop.

1. Stop automatically

The system will stop automatically when it meets auto protection condition.

The fuel oil way will cut off when the generator stops.

2. Stop manually

Under any condition, the generator will stop when the key is turned to “OFF” position from “ON” position.

5. STOP THE GENERATOR

5.1 Stop the generator

1 Before stopping the generator stop any machine connected.

2 Move the thermal of 30mA leakage breaker to the lower position so the generator is not giving power.

3 Let the generator run for at least 3 min. without load in orther to cool it down.

4 Stop the generator

- Electric start: Turn the key to the off position

- Remote control: Push the lock open key on the remote controller.

6. MAINTENANCE

6.1 Maintenance at fixed period

For the generator to work in conditions, maintenance at fixed period is very important. The diesel generator is consisted of diesel engine, alternator, control panel, frame etc.

Before maintaining the generator, stop the engine. You should perform the maintenance in a well ventilated area

After stopping the generator, clean it immediately to prevent the corrosion and to remove the sediment.

ITEM	everyday	at 20h	every 100h	every 200h	every 500h	every year or 1000h
Check the fuel	•					
Clean fuel tank					•	
Check oil leakage	•					
Check each fastening					•	
Change lube oil		• (first time)	• (next 3 times)	•		
Clean the element of air cleaner	shorter the time in dusty enviroments				•	
Clean fuel filter			•		• (replace)	
Check fuel pump					•	
Check the injector					•	
Check fuel pipe					• (change if need)	
Adjust intake/ exhaust valve clearance		• (first time)				
Grind intake/ exhaust valve						
Change piston ring						
Check battery voltage	EVERY MONTH					

6.2 Change lube oil

TIME INTERVAL:

20 hours for first time and 100 hours for next three times and 200 hours for normal operation.

Loosen oil-drained plug located at the bottom of cylinder block when the engine is at hot state. After removing used lube oil, screw in the plug and add the stipulated oil.

Please refer to point 3.2.2 for detailed information

6.3 Change the element of air cleaner

TIME INTERVAL:

every 500 hours, please change the element often in dusty enviroments. Also is recommend to perfom a cleaning everytime the oil is change.

Please refer to point 3.2.3 for detailed information

NOTE: Do not clean the filter element with detergent

6.4 Change of fuel filter

TIME INTERVAL:

every 500 hours replace, for areas with poor quality of diesel the cleaning and changing of the oil filter should be made often.

After changing the fuel filter the the air should be purgue, please refer to point 3.2.4 for details about purgue.

1 Close fuel valve of the fuel tank

2 Remove the fuel filter

3 Place the new fuel filter

4 purgue the air if needed as explained in point 3.2.4

6.5 Long term storage

When the generator will not operate for more than three months, it should be stored.

1 Drain off the fuel and lube oil.

2 Remove the dust and the oily.

3 Clean the crankcase and gear chamber with diesel and kerosene. Then drain off them.

4 Inject rust-proofed oil or lube oil without water (heat the lube oil to about 120 degrees Celsius till no foam exists.) into crankcase at stipulated level. Then run the engine for three minutes to splash the oil to the surface of all moving parts. Last drain off the oil after engine stopped.

5 Inject rust-proofed oil or lube oil without water into intake manifold and then rotate the engine rapidly. Last make intake/exhaust valve be at close state.

6 Dismantle cylinder head cover and brush rock arm etc. with a few rust-proofed oil or lube oil without water.

7 Wrap air cleaner and muffler with wet-proofed paper to prevent the dust and moisture going in.

8 Remove the dust and the oily on the frame and control panel.

9 Take out the key

10 Disconnect battery connector from the battery

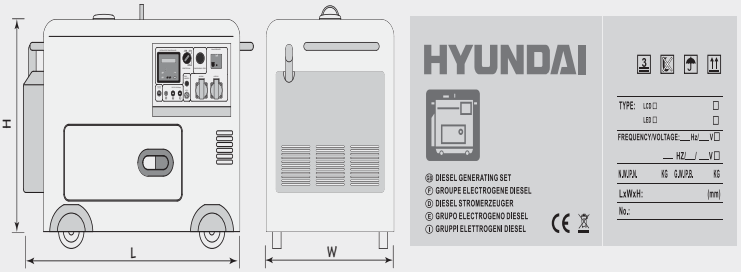
11 The generator should be stored at a place with better ventilation, clean, dry and no corrosive material nearby.

7. PROBLEM / SOLUTIONS

Causes		Remedies
No start of the engine	Insufficient fuel	Fill in the fuel
	Fuel switch not at “OPEN” position	Put fuel valve handler to “OPEN” position.
	Air in fuel circuit	Purge air in fuel circuit
	No spray on injector or a little quantity	Repair and adjust the injector
	Speed control rod not at “RUN” position	Set control rod to “RUN” position
	Check lube oil lever	The level between upper mark “H” and lower mark “L”
	Dirty on the nozzle	Clean the nozzle
	No electricity in battery	Charge or change the battery
No output of generator	Not turn on the switch	Turn to “CLOSE” position
	Worse contact of the socket	Adjust the socket
Voltage too low	Not reach rated speed of the engine	According the stipulation
	Not reach rated speed of the engine	Set speed control rod to operation position.
	Check AVR	Adjust the resistance clockwise
Automatic stop after a certain time of operation	(1) lack of the fuel (2) lack of lube oil (3) voltage too low/too high (4) frequency too low/too high (5) over-current	Repair according to relative alarming of control panel

If the problem is not solved please contact your dealer.

8. SPECIFICATIONS



Model	Product Size (mm)			Packaging Size (mm)			Package Material
	Length	Width	Height	Length	Width	height	
DHY12000SE	1040	660	740	1140	730	790	Veneer Box
DHY12000SE-3	1040	660	740	1140	730	790	Veneer Box
DHY15000SE	1040	660	740	1140	730	790	Veneer Box
DHY15000SE-3	1040	660	740	1140	730	790	Veneer Box

	Generator Model	DHY 12000SE	DHY12000SE-3	DHY15000SE	DHY15000SE-3
Generator Set	Frequency (Hz)	50	50	50	50
	Rated Power	8.7 kW	10.9 kVA	10.4 kW	13.0 kVA
	Max.Power	9.2 kW	11.9 kVA	11.2 kW	14.0 kVA
	Voltage (V)	230	400	230	400
	Current (A)	40	16.6	48	20.2
	Sockets	1x 16A & 1x 32A *(1)*	1x 16A/3~ & 1x 16A/1~ *(1)*	1x 16A & 1x 32A *(1)*	1x 16A/3~ & 1x 16A/1~ *(1)*
	Display	LED5	LED5	LED5	LED5
	Fuel Tank Capacity (L)	21	21	21	21
	Running Time under 50% Load (hr.)	18	18	17.5	17.5
	Noise Level behind 7 Meters 50% Load (dBA)	76	76	77	77
	DC Output (V/A) *(2)*	12 / 8.3	12 / 8.3	12 / 8.3	12 / 8.3
	Battery (Ah)	36	36	36	36
Engine	Engine Type	Diesel	Diesel	Diesel	Diesel
	Engine	D840E	D840E	D870E	D870E
	Power Output (HP)	22	22	25	25
	Start Method	Elec. star	Elec. star	Elec. star	Electrical start
	Displacement (ml)	836	836	870	870
	Oil Capacity (L)	1.7	1.7	1.7	1.7
Alternator	Alternator	A9-1S	A9-3S	A12.5-1S	A12.5-3S
	Rated Power (kVA)	9	11	12.5	14
	Power Factor (Cosφ)	1	0.8	1	0.8
	Voltage Regulation	AVR	AVR	AVR	AVR
Log.data	N.W.(kg)	245	245	245	245
	G.W.(kg)	280	280	280	280
	Loading capacity 20/40/40HQ	30/64/94	30/64/94	30/64/94	30/64/94

(1) Single phase socket thermal protected
(2) 100W max. output. 10A fuse protection

DHY-diesel generator set S-Soundproof E-electric start -3-three phase
Specifications are subject to continuous product delevopment

9. GUARANTEE

This generators are guaranteed for any failure or defect of fabrication for a period of 1 year or 1000 hours. Non respect of the instructions in this user manual will avoid the guarantee.

10. NOTES

HYUNDAI by ITCPower

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